

ASTP (USSR) MISSION SRL73/2  
Time: 05:21 CDT, 141:59 GET  
7/21/75

CC-M (Soyuz, this is Moscow.)  
CC-M (Soyuz, Soyuz, this is Moscow. How do you read me?)  
KIO (13 hours 33 minutes 20 seconds. Distance of spacecraft  
from the landing site is 210 kilometers. 3 minutes until deployment of the  
parachute. There is commentary from onboard the spacecraft.)  
CC-M (Soyuz, this is Moscow. ... very difficult to see any-  
thing. We can - Roger. We hear your ... We can hear the valves of the  
engines working. Everything is - How do you feel?  
USSR (Excellent; thank you.)  
CC-M (Very good. Roger. And we'll still waiting - are you  
waiting for the overload.)

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SCDR (Very good.)  
CC-M (Roger. We're still waiting - - are you still waiting for the g overload?)  
SCDR (We already had it. We felt it. Already decreasing, but I thought the g load would be greater.)  
CC-M (Roger, Soyuz.)  
SCDR (Moscow, what is our altitude now, approximately?)  
CC-M (I don't know. I'll give you the distance - 25 kilometers to the calculated landing point.)  
CC-M (Soyuz, this is Moscow. Soyuz, this is Moscow. Soyuz, this is Moscow. How do you read me? Soyuz, this is Moscow. How do you read me? Soyuz, this is Moscow. How do you read me?)  
KIO (This is the Soviet Mission Control Center. According to the reports from the - the landing sites, the descent vehicle has been sighted. Two helicopters have sighted the descent vehicle and they are observing its descent under the parachute. This is Moscow.)  
CC-M (Soyuz, this is Moscow. Soyuz, this is Moscow.)  
KIO (This is the Soviet Mission Control Center. The search helicopters are following the descent vehicle and are monitoring it visually.)  
CC-M (Soyuz.)  
KIO (This is the Soviet Mission Control Center. The report has come in from the rescue unit that the descent vehicle of the Soyuz has jettisoned its heat shield. The Soyuz is continuing to descend by parachute. The rescue service confirms receiving a shortwave signal from the transmitter aboard the descent vehicle. 13 hours 40 minutes 50 seconds. The spacecraft, Soyuz, is concluding its flight. Now we have a TV broadcast from the landing site. We can see the descent vehicle of the Soyuz spacecraft descending under its parachute. Moscow time, 13 hours 44 minutes 50 seconds. Altitude, 2,000 meters. Pilot Sergeyev of helicopter 8 is following the descent of the descent vehicle. Moscow time, 13 hours 45 minutes. Altitude, 1,700 meters. Moscow time, 13 hours 46 minutes. The rescue unit reports that pilot Kisilyev has established communications with the Soyuz 19 descent vehicle of the spacecraft. Altitude of the descent vehicle, 1,400 meters. Moscow time, 13 hours 47 minutes 50 seconds. Descent rate approximately 7 to 8 meters per second - the descent rate of the spacecraft. 1,00 meter altitude. Moscow time, 13 hours 48 minutes. The crew has gotten set and ready for contact of the descent vehicle with the ground. The area of the landing is a smooth field. Altitude, 600 meters. Moscow time, 13 hours 49 minutes 50 seconds. Contact of the descent vehicle at 13 hours 50 minutes 54 seconds Moscow time. The parachute has been jettisoned. The soft landing engines fired, and a small cloud of dust rose. The descent vehicle is lying on its side and the helicopters of the rescue unit are approaching it. 13 hours 52 minutes. The rescue helicopter has landed near the descent vehicle. Members of the search and rescue group are approaching the descent vehicle of Soyuz 19 spacecraft. Specialists of the search and rescue group are beginning to open the hatch number 5, the hatch of the Soyuz spacecraft descent vehicle. Moscow time is 13 hours 52 minutes 45 seconds. The place of landing is being approached by helicopters carrying the press.

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KIO (Commander of the spacecraft, Alexey Leonov, has just exited from the spacecraft. Moscow time at that time was 13 hours 54 minutes 25 seconds.)

KIO (Moscow time 13 hours 55 minutes. The flight engineer of the spacecraft, Soyuz 19, Valeriy Kubasov, has just come out of the Soyuz. The cosmonauts feel well. In the Mission Control Center, the flight time clock started at 130 - 142 30 minutes 53 seconds. The clock has stopped. The spacecraft Soyuz landed 10 kilometers from the calculated point of landing. At the present time, the crew is walking toward the rescue and search helicopters. This is Moscow Mission Control Center.)

KIO (This is Soviet Mission Control Center. At 13 hours, 54 hours - 51 seconds Moscow time. The descent vehicle of the Soyuz 19 spacecraft performed a soft landing. The Soyuz 19, its descent, and its landing was shown on color television. Alexey Leonov and Valeriy Kubasov feel well. The flight program of the manned spacecraft, Soyuz 19, on the joint U.S. American Soyuz - Apollo program was fully performed. During the 6-day orbital flight of Soyuz 19 spacecraft was the - the first - was the first experimental checkout of the compatibility of the docking systems. Also, joint transfers from spacecraft to spacecraft, joint scientific experiments were also performed, such as the Ultraviolet Absorption, Zone Forming Jungi, Microbial Exchange, the Multipurpose furnace, and Artificial Solar Eclipse experiments. These are all of importance - scientific importance. During the solo flight of Soyuz 19, the crew did some geophysical and biological studies. Also, photographing various sections of the Earth's surface, in the interest of the national economy. During the flight, Soviet and American cosmonauts did excellent - had excellent interaction and mutual understanding. They did everything well and in a friendly atmosphere. The joint flight control of the spacecraft was performed using tracking stations by the Soviet and American centers of flight - mission control. Between which, direct telegraph, TV, and telephone communications were established. During the entire experiment, the specialists of both mission control centers had very good interaction. The successful completion of the joint experiment of the spacecraft Soyuz 19 and Apollo confirmed the correctness of the design of the docking system and their compatibility. The scientific and technical results of the experiment and the important contribution to cos - to astronautics and - science and technology - the experience that was gained by the American and Soviet side during the preparations and conducting of the joint experiments will serve as a good basis for development in the future of international manned space flights and for joint exploration of space. This is Moscow Mission Control Center.)

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KIO (This is the Soviet Mission Control Center. Moscow time is 14 hours, 25 minutes. The 142-1/2 hour-long flight of Soyuz is over. 96 orbits were performed around the Earth. The launch was on July 15, 15 hours, 20 minutes, 5 milliseconds. Very great accuracy on launch. The docking was performed on July 17, at 22 hours, 19 minutes. The crew of the Soyuz spacecraft - of the Apollo met with the Soviet Soyuz crew for a handshake in space. And at 22 hours, 24 minutes on the 17th of July, within the area of coverage of Soviet tracking station, the - a greeting from General Secretary of the Communist Party of the U.S.S.R. Leonid Brezhnev was translated to the crew onboard. Who - he congratulated the crew for a successful docking. In his remarks, Mr. Brezhnev said that the docking of Soyuz and Apollo opens new possibilities for broad cooperation and scientific exchange between the peoples of the world in the interest of peace and all mankind. To you, he said speaking to the crew, the - you - the conquerors of space, had the great honor of opening the new page in the history of the conquest of space. This is Moscow Mission Control Center.)

BUSHUYEV (This very long and complicated program of the joint Soyuz-Apollo flight; as a result of the selfless labor of many thousands of Soviet workers, engineers, as a result of the excellent, the heroic labor of our cosmonauts, the program Soyuz-Apollo was completed fully, all the tasks provided for in the program were performed with positive results. We have to note that during the entire flight, the Mission Control Center did extremely excellent work. In conclusion, I would like to wish to our American colleagues, to the crew of the Apollo spacecraft, a safe flight and a safe completion of their mission and a successful landing. Just now, I spoke with the American Mission Control Center, Dr. Lunney, who warmly congratulated us for a successful completion of our flight and on my part, I would like to express my certainty that the landing of the Apollo spacecraft will be just as successful. Thank you very much. Now I would like to give the floor to General Shatalov.

SHATALOV (First of all, I would like to agree with Konstantin Davidovich Bushuyev and all of us here, to congratulate the Soviet people and the viewers with a successful conclusion of the joint flight of Soyuz-Apollo. We just were witnesses to the landing of the Soyuz spacecraft exactly in the aiming - at - at - on target. And we saw the cosmonauts, we saw that they are healthy, that they feel well. I would like to join all the people who took part in preparation, in training of the crew for this important mission. To congratulate the crew for their successful completion of their work. We have practically no remarks to make on the operations of the crew from the moment of launch until now. When they were - we have no comments to make at all whether be it about the launch or the assembly orbit or the docking or any other portion of the flight. The crew was extremely well trained, and we could feel good mutual understanding, both between the crews of the two spacecraft and among the members of each crew. And all the equipment functioned without any comment. There was one small remark to make about the TV operation. But, the

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BUSHUYEV (- - is not possible to be performed aboard one spacecraft, but only two. And in this, if it were only the one experiment on the artificial solar eclipse or ultraviolet absorption, and other medical and biological experiments were carried out by joint effort. This technical experiment dealing with the melting of various materials in weightlessness, this is one of the first steps in - on the road to creating a space technology in the preparation of high-quality materials. So this joint flight is completed. We've all seen the exciting moments of the launch of the spacecraft. We all were witness of the docking and the handshake in orbit by Soviet and American cosmonauts, and, finally, we just now saw the marvelous process and the exact on-schedule precision of the descent of the Soyuz spacecraft - the descent vehicle of Soyuz 19, and we saw how close it came to the aiming point. In the process - this - all operations were performed strictly on schedule and, finally, the performance of this flight was performed strictly according to an agreed-upon schedule. We saw essentially that the results - the results of this flight - the results of an effort of large groups of specialists and it's so pleasant for us to congratulate the designers, the workers, the engineers, the astronauts, the cosmonauts, as well as our American colleagues for the completion of this wonderful experiment. We would also like - our best wishes to Sevastianov and Klimuk. We would like to wish them aboard their orbiting station Salyut to have a successful completion of this flight. We were all witness to the space conversation between Soyuz 19 spacecraft and the crew of Salyut 4 space station. We heard the greetings which they exchanged, and this - these magnificent seven which were performing their space trip opened another new page in space research - in the history of the conquest of space. Permit me to pass my congratulations and best wishes to all the TV viewers who watched this important flight with great attention. Thank you very much.)

KIO (Now we'd like to pass the word to our representative of the American specialist group to say a few words.)

MCC-M First, on behalf of the American specialists here in the Moscow Control Center and my American friends in the Houston Control Center I want to express our congratulations to Academician Petrov, Professor Busuyez, ... Shatalov, Alexey Yeliseyev, and all the other Soviet Control Center personnel and other support personnel for a beautiful flight of Soyuz. And it has already been mentioned the cosmonauts Leonov and Kubasov did an outstanding job. I can only say that the joint flight has been a complete success. We monitored the crew activities - the cosmonaut and astronaut activities here in Moscow. And because of their outstanding performance, our job here on the ground was made very easy. I am sure that, too, the scientists are anxiously waiting to receive the experimental samples being returned. I know that myself and the other Americans here are very proud to have been a part of this flight, particularly having participated here at the Moscow Mission Control Center. My congratulations again to all my Soviet friends here, and my thanks to them for their best wishes for the Apollo safe landing. (English)

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KIO (In conclusion of our flight, we would like to pass the word to the director of this flight, Yeliseyev.)

MCC-M (We have just heard the congratulations from the central committee of the communist party and the government on the successful flight. First, we would like thank all those present here and our government for this briefing. Each one of us considered his participation in this work as an honor and a responsible task set by our homeland, and we tried to apply all our efforts so that this work would be completed successfully. Of course, everybody knows that the flight was successful. We did everything that was planned for this flight. We accomplished it all, and we became convinced that we can cooperate fruitfully and well with our American colleagues. The second spacecraft participant in this work is still in space, and, in conclusion, I would like to wish the Apollo spacecraft to have a happy landing - a successful landing. And on the 25th of July, we will be just as happy as we are now, I think, about our landing. Thank you.)

KIO (Thank you very much. Moscow time - we are - in Moscow time, the landing of the Apollo will be the night of the 25th. With this, we are concluding our broadcast on the successful landing of Soyuz 19 spacecraft, which performed in the first international Soyuz Apollo flight. Once again, our most heartfelt greetings and congratulations to Kubasov and Leonov on the successful completion of this wonderful program - remarkable program.)

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KIO                      This is the Soviet Mission Control Center. Moscow time is 15:15. ASTP program has been accomplished. This flight is a beginning, the first time in the history of aeronautics that a great joint scientific experiment like the Soyuz Apollo program was carried out by USSR and USA. The flight was conducted in accordance with an agreement between the Union of Soviet Socialist Republics and the United States of America. This document foresaw the execution of projects for the creation of joint means of motion and docking of the Soviet and American manned spacecraft and stations, with the purpose of increasing the safety of spaceflights and securing the possibility of realizing in the future, joint scientific experiments. The Flight Control Directors, in a TV broadcast, have transmitted best wishes for the successful completion of flight to the American crew, Thomas Stafford, Donald Slayton and Vance Brand, who continue their flight. This completes the transmission of the technical comments by the Soviet Mission Control Center. Mission Control Center, Moscow.

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ALEXEYEV       ... high rate of increase of population is considered to be the main reason for food shortage. They create most pessimistic prospects. For instance, the president of the Rockefeller Foundation, Mr. John Nowell, declares that food problems will become more and more serious and the future will bring us more severe famine, starvation and the deaths of more and more people. And he is not the only one making such predictions. We, I mean Soviet specialists in land reclamation and the policy of our state, cannot share such ideas. We think that if you treat the land in a proper way, if countries that have social fetters in using the land will cast the fetters off and if wide meliorization of land is carried out, it will give great results. And the sad predictions will not, of course, come true. Now I'd like to tell you a few words about what is being done in this direction in the Soviet Union. First of all I should say that we have more difficult conditions for agriculture than countries in Western Europe, without any exception, and than the USA. Our difficulty is that 60 percent of our fields are in droughty zones and though there is rich soil there, I mean in the steppe parts of the Ukraine, Volga region, virgin lands in Kazakhstan, lands in the northern parts of the Caucasus, low precipitation during especially dry years results in noticeable fluctuations of the output of agriculture crops. That's why, in spite of the total increase of agricultural production in the country, especially during the previous 10 years since the country has been carrying out the long-term program based on incentive of L. I. Brezhnev for developing agriculture, in spite of the increase of the production rate, we could not yet overcome the fluctuations. But we have this aim in our minds. And we see the way to achieve it - through irrigation of lands and that is why irrigation of lands is now considered in the Soviet Union as the most important government task, as the most important all nation task. Here are some data: 10 years ago the Soviet Union spent on irrigation of lands 1 billion rubles from its state budget, and all expenses of irrigation are included in the state budget of our country. This year's budget is 6 million rubles. Thus, within 10 years, the investments in irrigation of lands increased to six times as much. The five year plan that will be completed this year has investments in irrigation of lands over 26 billion rubles. And as to the next the 10th five year plan, the final sum is not yet finally determined at present because the plan is now being prepared and will be discussed at the 25th Party Congress at the beginning of next year, but surely the increase will be still greater. What opportunities has it given to us? First, we produce 8.4 million tons of cotton. It means we hold the first place in the world both in amount and crops of cotton, crops and land under cotton being constantly increased. We will meet not only our own demands in cotton but most of the demands of countries of the Socialist block as well. We sell it to other countries. In the last ten years we practically entirely provided our country with rice. Six or eight years ago three-fourths of our rice we still bought from countries in Asia and Africa. At present we meet our demands in rice ourselves; we produce about 2 million tons of rice instead



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of the 500 thousand tons of 7 or 8 years ago. Sixty percent of all vegetables consumed in our country (and this is over 11 million tons) is produced on irrigated lands. And finally grain - its proportion is not large yet. On irrigated lands we now produce about 10 percent of the total amount of grain produced in the country. But the proportion of grain produced on these lands is constantly increasing and we think that in 5 or 6 years we'll be able to cover the failures due to unfavorable weather conditions by means of producing grain on irrigated lands. And finally, great amounts of fodder is produced - that is irrigated pastures, fodder cultures and alternation of crops. All this serves one and the same task - to produce fodder. I'd like to give you the following example: Let us take such a region as Volga. It is both a very droughty region and a very important region in grain production. By the end of this year we'll have there about 1 million hectares of irrigated land, and 7 or 8 years ago we had only 170 thousand hectares of such land there. The same high development rate of irrigation we have in other parts of the country. Once more example: I'd like to tell you of our approach to irrigation work. It can be a good example to follow for many countries in Asia and Africa. They often come to our country and ask us about our experiment, but this is no longer an experiment; its scope is now so wide that it became a producing factor. This is development of desert lands. In Central Asia, in Kazakhstan, there are lands that are absolutely barren until they are irrigated. These are salty soils. These lands, when you look at them while flying over the fields, even in summer seem covered with snow. And if you have visited Central Asia you know how high the air temperature is there in summer. The white cover is salt that came out onto the surface. Nothing grows there. Even camels cannot be pastured there, and a camel is the most unpretentious animal. This was the so-called barren steppe which covers an area of more than 300 thousand hectares and which within last 10 or 12 years was changed from a desert into a region with agriculture on a very high level, a region which is populated and produces at present about 400 thousand tons of cotton. We have built roads there, power supply and communication lines, running water supply and gas supply systems, and settlements with all facilities which hardly differ from those in cities. You can find there television, radio, central heating and gas supply. Everything that will provide a high level of living conditions for the population, high mechanization level for cotton production and high living standards for people living there. This is not the only region; the same year can find where we built Khoroshiaski ...

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(Garble)

ALEXEYEV        - - The same approach is used in the Volga region. The question is within the scope of activity of national committees which are part of our international organization. I have in mind the exchange of views and experience gained during this period, as well as discussion of current problems pertaining to land reclamation. I will not dwell on all the specific technical problems, but it is sufficient to say that technological progress is the main point of our interest. So naturally, this congress and its executive organs will focus attention specifically on technological progress - on mechanization of work and perfection of equipment, automation of irrigation works and watering techniques, i.e., on all those factors which will facilitate further advancement in this area. I would like to add in conclusion that the Soviet Union shares its experience with many African and Asian countries, helping them (free of any interest) both in organizing reclamation works, providing technical aid, and planning and implementing specific projects. This international activity of the Soviet Union should help in bringing about a solution to the most pressing social problems, i.e., improving the standard of living. In conclusion I would like to mention our improvements in per capita consumption: Meats and fats - in 1965 the consumption was 41 kg and in 1974 - 55 kg per person; milk and dairy products: 251 kg and 300 kg, respectively; Eggs: 124 and 205; Sugar: 34.2 kg and 45 kg; Vegetables and melons: 72 kg and 80 kg; Berries and fruits: 28 kg and 37 kg. At the same time there was a drop in consumption of the following two groups of products: Potatoes: was - 142 kg, now - 121 kg; Bread and groats: was 156 kg, now - 142 kg. We consider these figures to be perfectly normal. They indicate a change from carbohydrate diet to protein diet. However, there is a significant increase in consumption of all the other products. Since the end of the war the population of the Soviet Union increased 20% while the consumption of such products as sugar increased 150%, i.e., the rate of growth of consumer goods exceeds the population increase. Such percentage is considered as perfectly normal; as you know, the well-being of the people is the greatest concern of our party and the government.

KIO

Thank you, Minister Alexeyev. Now you can ask questions.

QUERY

(Question from APN, for the minister, we have just seen a wonderful international space experiment. Could you say, are there any such projects in irrigation and drainage, such future possibly irrigation projects on the international scene?)

SPKR

(First of all I'd like to say, that those with whom we cooperate, we shake hands not out in space, but here on Earth. As everybody else, we are very happy over the space experiment. And we have no doubts that this will facilitate the further development of international cooperation, particularly so, since the international climate the detente facilitates it. As for our cooperation, I can say that it's just beginning to be outlined. The trouble is that the water resources on this planet are distributed on a very unbalanced - in a very unbalanced way. This concerns almost all countries. In the Soviet Union eighty percent of our water resources flow north, while eighty percent of the utilization is demanded in the southern slopes. We have very rich water resources, that's why so far such an unbalanced distribution is not yet an obstacle to our (garble). Now a tremendous project is being drawn up to utilize Siberian rivers in central Asia. First of all, this will be a canal approximately 2-1/2 thousand kilometers long. This is no longer a

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canal, this is a strict river, only an artificial river. The same problems exist in India. And this form of cooperation - this form of global cooperation is beginning to be outlined now in our - in our cooperation. I must say that we also take advantage of the various space resources. The various Sputniks and cosmic ships are a help. We can measure the humidity of the Earth, determine the amount of water in snow, which is very important to irrigation, the clarity of the water. We also determine the various elements inflicting our harvests, and the effects of irrigation on the surrounding environment and many, many other problems which are a result of it. So you see space flights also help us.)

QUERY (The question from - the question from Belorussian radio. First, could you say anything about irrigation work in the basin of the Pripet River, in particular in the Belorussian forest area. And what do you consider to be - -)

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QUERY (... Would you say anything about irrigation work in the basin of the Pripet River, in particular in the Belorussian forest area? And what do you consider to be the most urgent task for the Belorussian irrigation today?)

ANISIMOV (We highly value the work of Belorussian irrigation expert. You know that during the Second World War the Belorussians suffered the most destructive effects of the temporary occupation by Hitler troops. I was at the front throughout the entire war. I took part - I took part in the fighting for the liberation of the Belorussia, and I saw the destruction there. If you go there today, you will see nothing of what - of that destruction. In the past 15 years, Belorussia has almost trippled it's harvest. And this, in large measure, is due thanks to irrigation. The scale of work there is tremendous. More than 2 million hectares have been irrigated and the future is very broad, particularly in the Pripet basin.)

KIO (One more question.)

FRANCE PRESS (France Press. Returning to what you said about the canal 2-1/2 thousand kilometers long, to be used to divert Siberian rivers to Central Asia. We know that at certain symposiums in Geneva and in Vienna, Soviet/American experts spoke of using underground atomic explosions for such work. Could you say if such work would be carried out on this canal?)

ANISIMOV (This canal from Siberia to Central Asia will have to cross several watersheds with a height of several score meters. There are three ways of overcoming this. One: tunnels, or pumping stations, or atomic explosions. At the present time there is broad research work going on on these three problems, because the entire project will be - will cost somewhere in the vicinity of 20 billion rubles, therefore we must know exactly which of these is best, and it hasn't been determined yet.)

QUERY (The first question from the Pravda correspondent in Czech - from the Czechoslovak correspondent of the newspaper Pravda in Czechoslovakia. First, what is the irrigation work being carried out in the non-black earth regions?)

ANISIMOV (This work in the Russian Federation, our biggest republic, is very broad in scale. We have drawn up a government program up to 1990. The cost of this program is 35 billion rubles. This work will encompass 29 provinces and autonomous regions in the Soviet Union, with a population of 58 million. This is 26 million acres - hectares of arable land. This is the region from the north of Arkhangelsk down to Kursk and from the borders of Belorussia to the Ural Mountains. Here there is very unbalanced irrigation at present. Millions of hectares have to be drained while the natural arable land needs land improvements. The work started this year. Almost 6 billion rubles have been allocated in this five year plan, up to 19 (garble). In this five year plan, 1 million 900 thousand hectares of land will be drained, in that area, and 550 thousand hectares will be irrigated. And various other technical resources will be used over 3 million hectares - removing stones,

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boulders and so on. The goal is to double by 2-1/2 times agricultural work by 1990. This is a very realistic goal. It will demand not only work by irrigation specialists but all those who are occupied in agriculture. The land here is very good for fertilizer and a large amount of mineral fertilizer is being sent to this area. Due to this good response we are certain that this task will be fulfilled.)

QUERY (The Netsabatszat correspondent would like to know what the cond - weather conditions - climatic conditions are for the harvest for 1975 and could the minister compare these conditions with 1972? And also could you say a few words about the irrigation work that was carried out in the period between 1972 and 1975.)

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ANISIMOV (I don't think that the Minister of Agriculture could forecast 1975 so far yet. We haven't even harvested 25 percent of our area, while in Siberia the harvest isn't even ready yet. So, it's a little bit too early to speak of results for this year. For certain areas it is a drought year. But where the harvests grow up on irrigated land, and we have 14-1/2 million hectares of such land as of today, we expect a very good harvest, more than last year. And here, once again, the irrigated lands will prove their advantage in the national economy.)

QUERY (ABN correspondent would like to ask Franji, who's our guest, Franji is Consulting Secretary General of the International Commission on Irrigation and Drainage. The Soviet Union and India cooperate in many spheres. Could you say anything about their cooperation in irrigation and drainage?)

FRANJI Yes. There is very happy cooperation in irrigation and drainage. Your minister was very recently in India. He traveled to many projects - large projects. He gave very interesting information required by the Indian engineers. In reciprocation, he also admired some of the special in - India irrigation works and gathered information regarding them. And so there is very violent but very strong cooperation between India and USSR in irrigation. (English)

QUERY (The Czechoslovak correspondent, his second question. How soon do capital investments begin showing profit in irrigation (garble)?)

ANISIMOV (I will try to answer your question briefly because this demands a very detailed answer. In cotton and rice capital investments start showing profit - in cotton and rice, yes - approximately 3 or 4 years. Has particular good profit where we have orchards and vegetable gardens. The grain and feed areas, their return is much slower, but we have no alternative. The state does this intentionally. Comrade (garble) will return to your question later on.)

QUERY (The editor in chief of the magazine Agriculture and Economy, Anisimov, would like to know that at one time there was the idea that on irrigated land it was not profitable to grow grains. What is the situation today?)

ANISIMOV (I al - I already said that we have no alternative. There is actually no cheap way of getting grain. All the possible areas which could be used to grow grain have already been plowed. So I am for extensive use of land that has already been used up. So now the goal is through intensification to raise harvest. I can say the following from our experience on irrigated land. Although the expenditures per hectare on irrigated land is more than nonirrigated land, we get a bigger harvest in return. Let us take Crimea, even for this year. Crimea is in the south, so therefore the harvest is earlier there. In the nonirrigated areas we get about 26 - 27 centners per hectare. On irrigated, 43 to 45. So if we take expenditures per hectare and divide it by the harvest, the self cost of harvest on irrigated land is not higher than on nonirrigated land. While on the nonirrigated land we have 80 to 100 percent profit, the same cost approximately on irrigated land. If we make - if we allow for large expenditures on irrigation, this is approximately 2-1/2 thousand to 3 thousand rubles per hectare. After all we are doing this for hundreds of years in advance.)

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QUERY (Once again a question for Dr. Anisimov. What are the concrete ways for achieving a sharp rise in Soviet rice harvest?)

ANISIMOV (You know that rice demands a large quantity of water. If one hectare of wheat demands 3 to 4 thousand cubic meters, rice demands 20 to 23 thousand cubic meters, maybe even 30 thousand. Therefore rice - a good harvest of rice - can be guaranteed only where there are large quantities of water. We have such conditions in the far east, the lower reaches of the Volga, the lower reaches of the Amu Darya, and the lower reaches of the Dnieper and the Danube. And that is where we are developing rice harvests. We still have more opportunities. I think we shall increase our rice areas, in the next 5-year plan, by approximately 1-1/2 times. After that we'll be restricted by our water - available water resources.)

QUERY (Again returning to the Czechoslovak correspon..., - -)

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QUERY (In returning to the Czechoslovak correspondent, what are the plans for irrigation work along the Volga river in this and the next five-year plan?)

SPKR (Approximately the same type of question asked by N. Solotskaya, who the heads of the Department of Science in the magazine "Krestianka": On this question alone, I could hold a special press conference. In the last 5-year plan, we spent 6 hundred million for irrigation work along the Volga. This is 1960 to 1970 - in 1966. This 5-year plan, we are allocating 1 billion 7 hundred thousand. The next 5-year plan up to 2-1/2 billion. Such is the rate of growth of the capital expenditures for irrigation alone. This past 5-year plan we irrigated 6 hundred thousand hectares. In the next 5-year plan, we plan to irrigate another 7 hundred 50 thousand. As for the Astrakhan region, this is where the Volga flows into the Caspian, there we are developing our rice plantations. And most of the watermelons you will see sold in Moscow come from Astrakhan. They are believed to be the best watermelons in the country, and they are all cultivated on irrigated land. Astrakhan supplies the central areas of the country with almost 3 hundred thousand tons of tomatoes also harvested on irrigated land. There is so little rainfall there that without irrigation practically farming cannot exist. As for water resources, the flow into the Caspian is now being regulated by reservoirs along the Volga. And there are long range plans to use rivers, waters from the north, to have them flowing into the Volga. This is from the Pechora river and some fresh water lakes.)

INTERP (The Belorussian correspondent wanted to know whether or not the cosmonauts in space so far today, Klimuk and Sevastianov on Salyut 4, had carried out any special work for the drainage and irrigation industry, because he knows that the minister of forestry has thanked Klimuk and Sevastianov for work that he did for them. So far, the minister says, they have some plans but how far they've been carried out he doesn't know. He will know when they land. But he does send his congratulations and thanks for what they plan to do.

QUERY (The correspondent, Moscow correspondent of the newspaper Soviet Turkmenistan, asked the minister what the plans are for irrigation work in the Turkmen Republic, and are there any plans for hard covers over the Caracum canals to prevent water evaporation, say concrete pipes or - -.)

SPKR (I must say that the Turkmen Republic after the completion of the Caracum canal saw it's second rebirth. This is an 8 hundred kilometer long canal. Construction work is continuing that has brought to life practically dead areas that had no water at all. Thanks to this Caracum canals the Turkmen Republic, every year, the last few years, has given the government more than a million tons of raw cotton. Prior to the canal the harvest was 3 hundred to 4 hundred thousand tons. Yes, we shall together with the



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Turkmen Government continue irrigation work and developing the various agricultural resources. As for the canal itself, various designs show that it is not profitable to carry out work of covering the canal. That's as of today, maybe in 15 or 20 years we shall return to this place. Today, this would mean many millions expenditures which would not show any profit. Thank you, comrad Park, for your active participation and one more question from you.)

QUERY (Could you tell us anything new about methods of saline land drainage.)

SPKR (In the past 10 years I can say that we have fully mastered the process of saline land drainage. Not so long ago, this was still a very serious calamity for irrigated land. I mean, secondary salinage. Today the systems of vertical and horizontal drainage - -)

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SPKR (Today the systems of vertical and horizontal drainage have technically been improved greatly, and we can keep the horizon of ground waters at the level we desire. This can be seen very vividly over a hundred thousands of acres in the Hungary steppe area.)

QUERY (The deputy editor-in-chief of the journal Chlopkovodstvo, that's Cotton Growing, would like to know what the prospects are of international exchange of information?)

SPKR (The exchange of information with those countries that are members of the International Irrigation Commission is very effective. The International Commission on Irrigation and Drainage, whose secretary general is with us today, Mr. Franji publis - publishes material on these questions and also covers the various problems in different countries. There is a broad assortment of - at multilateral meetings and also individual visits to different countries, and particularly at such international congresses as today in Moscow.)

QUERY (The Bulgarian correspondent would like the minister to speak in detail on the directors of the 24th Communist Party Congress on Irrigation and Drainage.)

SPKR (I believe that everything that I've said here today, ...)

SPKR (Possibly this question was asked prior to the press conference because everything that we have been doing in recent years is all realization of the directives of the 24th congress. If you are interested in greater detail, I'd be very happy to see you at our ministry where I could give you more material.)

BULGARIAN (The (garble) correspondent would like to know, when you speak of using fresh water for irrigation, you have in mind rivers which - from which arise the problems of salinated water. Could you tell us what you plan - how you plan to use artificial methods of achieving fresh water, say artificial rain, how you will use snow, ice, and so on?)

SPKR (Each branch of economy naturally has its own problems which are being dealt with on a very broad scale. And some of these problems will be utilized only in the future. One such problem is the problem which was spoken of here by the correspondent (garble). Our scientific research work covers these problems. We cannot say that what we have achieved allows us to make broad use of these methods. But there is some hopeful information on it. I know that the United States claims that it can already, by 10 or 15 percent, increase the water flow by artificially influencing inland water. It is very interesting, because in the central Asia, most of our rivers get their source from ... glacier in the ... and Tien Shan Mountains. So we are carrying out certain work in that direction.)

KIO France press.

QUERY (The first question, France Press. Could you tell us what work is being done to study the ecological and climatic changes possible from a change of flow due to the canal that you spoke of?)

QUERY (Second question, you know approximately how long the canal will be - 2,500 kilometers, could you tell us where it will start

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and where it will end? Could you tell us if solar energy to work pumps is used in the Soviet Union on irrigation projects?)

POPANDOPOULOS (I'll answer the first question on ecology in view of the construction of this canal. There are scientists who expressed their concern over this. They say that possibly those areas from where the water will be taken will be covered with ice - there will be ice coverage. The axis of the Earth may be shifted because the weight of the water would affect the rotation. And although some of these ideas may seem fantastic, nevertheless, we do not simply ignore them --)

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POPANDOPOULOS (That is why a very large number of special institutes, scientists and research workers have been involved in the designing of the canal. And we think that the next five-year time will be occupied totally with completing research work and drawing up designs. As for some of these ideas - the fantastic ideas that were expressed, I think that the following figures disperse them. The flow of three big Siberian rivers - the flow of water of these rivers in one year is approximately - is approximately 1200 cubic kilometers. Each cubic kilometer is a billion cubic meters. We intend to rechannel 6800 cubic meters - kilometers, which is only approximately 3 or 5 percent of the combined flow. I doubt that such a small amount could cause any serious ecological changes. Nevertheless, we are continuing our studies. As for the route of the canal from the center of the Ob River, through the steppes of Kazakhstan, into the Azov Sea, that's the general route. And now (garble) the Azov - the Aral Sea. As for solar energy, we are carrying out work in that direction, but there is very little hope so far. A certain local problem has been solved but as for a large scale - for using it on a large scale, no country has resolved that yet. Nevertheless, research work is continuing. Maybe in the future the results will be better.)

QUERY (Two question from the correspondent of the Moscow newspaper, Moscow News. First, would you tell us what is being done to protect the water resources of our country, particularly such a famous lake as Lake Baykal and second, could you tell us what is done to protect the water on border rivers in particular the Tisza River?)

POPANDOPOULOS (The problem of protecting this country is of great concern to the Soviet state. In the last few years some very important legal measures have been taken. The U.S.S.R. Supreme Soviet adopted the basis of legislation for water resources. A special session was dedicated to this. Water resources legislation have been adopted by all 15 Soviet countries. And, with every passing year, expenditures and allocations are increasing for this. The law foresees the prevention of commissioning of any enterprises until it has the proper water purifying installations. As a good example of water purification work, I can cite the work that's being done in Moscow. All water outflow from the city is especially purified biologically and technically. But, that's why we are always ready to play host to persons who wish to swim that part of the river or to go fishing in the Moscow river. I don't think that many capitols of the world can boast of such water purification installations as Moscow. Many other of our cities have biological purification of water. However, on the whole, this problem has not yet been settled. But still it requires large expenditures in order to prevent the spoilage of water from the city. The government has entrusted our ministry with control of this work. Decisions and measures have already been taken in order to ensure the purity of Lake Baykal. You know that Baykal is the largest fresh water lake in the world. We have issued special instructions for all sanitary work in the area of Baykal, a

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special water purification inspection there. No enterprises are planned - can be constructed there that may damage the water. And we have a recent agreement with Mongolia to purify and maintain as pure the waters of the Selenge River. That's the main river flows into the Baykal. There are a few plants on the river. I studied those plants and others that have been established but special water - special purification installations have been erected, and the work on these plants continues to prevent any damage to water by these plants. In other words, I can say that the Lake Baykal will be preserved for the present generation and for future generations.)

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POPANDOPOULOS (In other words I can say that the - the Lake Baykal will be preserved for the present generation and for future generations. Mr. Popandopoulos speaks very good Russian as he says these questions of irrigation and drainage require he learn Russian.)

QUERY (The Bulgarian correspondent would like Mr. Popandopoulos to answer a question concerning cooperation between Bulgaria and Greece in water irrigation.) I would like to hear his opinion on this question.

POPANDOPOULOS (Please excuse any mistakes I make in Russian. After all, 50 years I haven't been here so it affects the language. And I am very pleased to answer your question. The Balkan countries, you know, require a great deal of irrigation work. The southern part of the Balkans is in the area of the Mediterranean, the climatic condition. And there are going to be no intensive agricultural work without irrigation there. That's why all the Balkan countries are naturally interested in large-scale irrigation work for their economy. Greece is in the very south of the Balkans and therefore we are not in a privileged position. The rivers that come to us from the north first pass through Yugoslavia, Bulgaria, and other countries. But the cooperation between the Balkan countries which is intensifying greatly thanks to the new systems there, and this cooperation is minimizing the problems that we have with the - receiving fresh water from the north. Greece already has agreement with Bulgaria and with Yugoslavia and an old agreement with Turkey to irregulate the use of these rivers. But besides these such agreements, we are also highly interested in scientific and cultural exchanges with these countries because in the final analysis they will also have their influence on irrigation. And I can assure you that Greece has very very friendly and warm contact with Bulgaria and Yugoslavia particularly in the field of irrigation and hydro technics. I hope in the future these contacts will (garble) - and I hope that our international commission will be able to help us in this respect also. Thank you.)

KIO Any more questions? If there are no more questions ...

SAVITSKI (I want to say a few words about the work of the Soviet National Committee and our international commission. I am something of a veteran in this international committee - commission so I can now allow myself to judge of the work of various national committees. If we want to assess the work of national committees we can approach this assessment from 2 points. First, to take the national committee as - on the whole and the second point of view is to take - to examine the work of individual members of the committee. From the first point of view, the Soviet national committee is evincing a very high activity of work. Ever since the Soviet Union became a member of our International Organization, the National Committee has taken active part in all our international congresses and symposiums and also has attended all our annual executive committee meetings. In the interest of scientific contributions, is very great, and has contributed a great deal of scientific materials. I should also like to say a few words about individual activities of members of the national committee from the point of view of

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international cooperation. All our work, all our entire future is based on the future international operation, and in order this international cooperation be truthful, there must be certain favorable conditions for this, and these conditions must be based upon mutual respect and trust. This in turn depends on the delegates from all the national committees who attend our international meetings. And here I should like to stress in particular the friendly atmosphere and friendly approach by the Soviet National Committee in relation to its colleagues on the international commission. I first met the Soviet delegation almost 20 years ago in San Francisco. Then it was headed by Alexander Nicolayevitsch (garble), the late Alexander (garble).  
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SAVITSKI (And I should like to say that I greatly admire the restraint and tact shown by the Soviet delegation to the difficult conditions that it found itself in (garble). And due to the maturity and experience and restraint of the Soviet delegation our international commission was able to avoid many dangerous pitfalls. We have no doubt that the relations between the countries and our commission will progress, and in this year also, just as previously, the contribution by the Soviet nationals will be very high. The very fact that this congress is being convened in Moscow, and it also coincides with the 25th anniversary, ... with our 25th anniversary. And we have no doubt that the Soviet Union will organize this congress on a very high level and it will be a noticeable stage in the history of our international organization. Thank you. I give the floor now to secretary general Frangi.)

FRANGI Thank you Mr. Savitski. Distinguished members of the press, while we all can look back with satisfaction on the achievement of ICID during the past 25 years, there is no doubt of that whatever, both on the technical field, and in international cooperation, both of which have been given a great boost up under President Alex Savitski has in the past. There is no room for complacency and we are all thinking and being very excited about the future, with more serious challenges to be placed in view of the expected population explosion by the turn of the century. The ICID is very geared to meet the challenges of 2000 A.D., and I hope that the golden jubilee will be also in Moscow to view what we have done between now and then. As I said, the ICID is well geared because the communication gap between the countries have been suitably breached, by the increasing publication. We have a unique multi-lingual dictionary which is not only in English and French, in English and German, in English and Russian, in English and Arabian, and in most countries. And we have adopted a method by which the same terms, with their definitions in different languages, can be understood. The multi-disciplinary team work for ensuring the success of the green revolution was also set in train since 1967. Caused by the suggestion by the council to cover all professional fields, delegation engineers, agronomists, agricultural experts, soil scientists, (garble), etc. The ties of the water management to soil requirements, proper crops, short season and dwarf crops, multiple cropping and better yields, the use of rice seeds and proper fertilizers, are all exercising our minds in our discussions and we have to think of the best to be done before 19 - 2000 A.D. The ICID is in the position to promote these contacts. We regard that it is imperative that the total future needs and problems to be encountered in the optimum utilization of water resources during the next 25 years in the country be assessed now. System plans we find quickly prepared now, so that each country is in a position to implement the schemes in step with their requirements. It is for an international organization like the ICID to bring awareness of the challenges to be faced in the next 25 years to meet the food and the fiber requirements for the increased population. And we will need all your help of the press in order to achieve our aims. (English)



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SAVITSKI (Those interested in the text of the report here made here by Minister Alexeyev can get the text after the press conference in the hall. The minister also promises you these souvenir booklets. Tomorrow the final press conference will be held here at 12 o'clock on the joint flight mission.)

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SAVITSKI (- - of the joint flight mission. We expect the Academician Kotelnikov) We expect the Academician Kotelnikov, the Soviet Technical Director of the Project, corresponding member of the Academy of Sciences Professor Bushuyev and naturally, General Leonov and Flight Engineer Kubasov to make speeches here. Other leaders of the project and the flight and cosmonauts will also participate. They will answer your questions, so you will have the possibility to ask questions. And now I thank Minister Alexeyev for his speech and for answering numerous questions, because it is only an interesting speech which is able to rouse questions. I want to thank Minister Alexeyev for inviting to our press conference Mr. Franji and Mr. Popandopoulos, who, I think it was their personal idea, made a very nice contribution into the work of our press conference. So I thank Mr. Franji and Mr. Popandopoulos for that, and thank you for attention. I thank Comrade Kurnakov for a good translation.

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